

REMARKS

Claims 1-34 remain pending in this application. Claims 1, 2, 4-7,10-13, and 31-33 currently stand as rejected. Claims 3, 8, 9, 14, 15 and 13 are objected to and claims 16-30 are allowed.

It is believed that the remarks laid out herein below attend to all rejections and further issues raised in the pending office action dated 26 May 2005.

RESPONSE TO REJECTED CLAIMS

Claim Rejections – 35 U.S.C. § 103(a)

To establish a *prima facie* case of obviousness, three basic criteria must be met.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings.

Second, there must be a reasonable expectation of success.

Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The ***teaching or suggestion*** to make the claimed combination ***and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.*** (emphasis and formatting added) MPEP § 2143, *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)

The Examiner has rejected Claims 1-2, 4-7,10-13, and 31-33 as being unpatentable over U.S. Patent No. 5,343,422 to Kung et al. ("Kung"). Applicant respectfully disagrees and traverses the rejection, at least for the following reasons. As Examiner has indicated an allowance of the first dependent claim (claim 3) if re-written to include the limitations of the base claim (independent claim 1), applicant respectfully begins argument with respect to claim 2.

Claim 2: In order to render applicant's claim 2 *prima facie* obvious, Kung must teach or suggest a soft reference magnetic memory digitizing device including:

- (a) an array of soft-reference magnetic memory cells;
- (b) each cell characterized by an alterable orientation of magnetization, the orientation changing upon the substantially proximate application of at least one externally-applied magnetic field; and
- (c) at least one magnetically tipped stylus for applying at least one external magnetic field to at least one magnetic memory cell of the array.

Respectfully, Kung does not teach or suggest at least element (c) -an externally applied magnetic field as applied by a magnetically tipped stylus. Kung shows and describes a storage element 20.

Switching of the storage element 20 between the "1" state (FIG. 2A) and the "0" state (FIG. 2B) is accomplished by simultaneously applying a transverse field and a longitudinal field to element 20. The longitudinal field is induced by a longitudinal write current 32 in a write line 34 provided by a conductor that extends orthogonal to the length of the storage element 20. The transverse field is induced by a transverse write/sense current 36 flowing lengthwise through the element 20. (Col 3. Lines 31 – 39, emphasis added)

As the transverse write/sense current 36 is flowing **through** storage element 20, it is clearly not providing an external field. In addition, FIGs. 2A and 2B clearly show the write line 34 as a structural component of storage element 20, not an external component, thus write line 34 is clearly also not providing an external field.

Longitudinal write current 32 likewise flows **through**, and is not external to, a storage element. For example, Kung discloses that to write to a cell 50A, current 32 "flow(s) **through** MR element 52 to induce a transverse field;" (col. 4, lines 28-29, emphasis added; see also col. 4, lines 16-25; FIGs. 2-3).

Neither longitudinal current 32 nor transverse write/sense current provides an external magnetic field affecting the storage element. Rather as the generating currents flow through the storage element 20, the magnetic fields are internal to the storage element 20.

The schematic diagram of a 2x2 magneto resistive storage array in FIG. 3 further emphasizes the unitary nature of the Kung storage device and the internal nature of all generated magnetic fields. Lines B1 and W1 are shown as integral parts of the array 40 and are used to generate internal fields for reading and sensing.

For example, to write into cell 50A, switches 55 of cell 50A and 57 are closed, so that lines B1 and W1 are connected to allow write current (32, FIG. 2) flow through MR element 52 to induce a transverse field; and write line W1^s is connected to ground to allow current flow to induce a longitudinal field. (Col 4. Lines 25 – 31, emphasis added)

Respectfully, Kung teaches components within the device providing two magnetic fields within the device that are locally effective within the device. Externally applied magnetic fields are not discussed, nor are they suggested. Kung therefore fails to meet the final criterion necessary to establish a *prima facie* case of obviousness, as set forth above.

Kung also fails to provide motivation or reasonable expectation of success for utilizing an externally-applied magnetic field. For example, it is highly likely that an external magnetic field would interfere with the purposefully internally provided and controlled magnetic fields set forth and described by Kung. More specifically, the write process is an internally driven and controlled process. As Kung does not discuss externally applied fields, and provides no apparent manner of distinguishing them from internally generated fields, externally applied fields would tend to corrupt the nonvolatile storage properties as set forth by Kung, and is therefore nonobvious. Applying an external field with a magnetically tipped stylus is then also non-obvious.

In contrast, applicant clearly recites and shows an external magnetic field supplied by stylus **110** (see applicant's FIGs. 2a-3). To provide the external magnetic field, it is clear from the teachings set forth by applicant that the stylus **110** is external as well.

Kung additionally fails to teach a magnetically tipped stylus. Indeed there is no teaching or suggestion whatsoever in Kung of a stylus or any structure remotely resembling a stylus, or that the stylus is external.

Applicant notes Examiner's statement "a means for providing the external applied magnetic field (see claim 3) would have been obvious rendered the same desired function as that of the magnetically tipped stylus as recited in claims 1, 6-7 and 12-14." Respectfully, claim 3 does not recite means for providing an **external** magnetic field, instead reciting only "means for applying magnetic fields to the storage element for switching it between two states representing a "1" or a "0" (see claim 3).

The following is a quotation from 35 U.S.C. 112, sixth paragraph:

"An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and ***such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.***" (emphasis added).

Furthermore,

"The plain and unambiguous meaning of paragraph six is that one construing means-plus-function language in a claim must look to the specification and interpret that language in light of the corresponding structure, material, or acts described therein, and equivalents thereof, to the extent that the specification provides such disclosure." *In re Donaldson*, 16 F.3d 1189, 29 U.S.P.Q.2D 1845 (Fed. Cir. 1994).

Kung Claim 3 recites "means for applying magnetic fields to the storage element for switching it between two states..." and thus we must look to the Kung's specification and construe the "means" language of this claim as limited to the corresponding structure disclosed in the specification and equivalents thereof. In addition, it is noted that the word "equivalent" in 35 U.S.C. § 112, paragraph 6 should not be confused with the doctrine of equivalents, *Id.*

As stated above, Kung teaches structures that apply a magnetic field *internally*. There are absolutely no means taught for external application of a magnetic field. Contrary to the Examiner's statement, it would not have been obvious to utilize a magnetically-tipped stylus to apply a magnetic field in Kung, precisely because Kung's magnetic field is internal. There would be absolutely no motivation for one to modify Kung's device in the suggested manner, because one would have to apply the stylus to components internal to Kung. This would require opening whatever device housed the storage device. Further, unless Kung's device is quite large (which would make it useless in today's electronics), application of an internal field with a stylus would be very difficult.

The structures of Kung are not equivalent to those disclosed in applicant's Specification, nor do they perform the identical function. For example, the transverse write/sense field is induced by the write/sense current **36** flowing through the element **20**. The write line **32** providing an additional field provided by an additional current is illustrated as an adjoining structural element in FIGs. 2A~2B, and in FIG. 3 as a physically integrated part of the electrical circuit within array **40**.

Respectfully, first, Kung fails to provide any teaching, suggestion or motivation for modification to use externally applied magnetic fields. Second, as Kung provides no mechanism to distinguish between internally and externally applied magnetic fields there is no reasonable expectation of success. Third, Kung fails to teach or suggest all of the claim limitations set forth by applicant, for example the externally applied magnetic field and the magnetically tipped stylus.

In light of these failings, applicant believes that claim 2 is patentable over the Kung reference. Withdrawal of Examiner's rejection and allowance of claim 2 is therefore respectfully requested.

Claims 1, 4 and 10: Independent Claims 1, 4 and 10 each incorporate the limitations of an externally applied magnetic field and a magnetically tipped stylus, elements which as discussed above are not taught by the Kung reference. The above

statements are therefore incorporated by reference in their entirety, with respect to these claims and withdrawal of Examiner's rejection and allowance of claims 1, 4 and 10 is therefore respectfully requested.

Claims 3, 5-9 and 11-15: Dependent claims 3, 5-9 and 11-15 depend from dependent claims 2, 4 and 10 respectively, and have been objected to or rejected in light of Kung. Respectfully, applicant has demonstrated in the above arguments, incorporated herein by reference in their entirety, that Kung fails to establish a *prima facie* case of obviousness. Examiner has noted points of patentable novelty in claims 3, 8-9 and 14-15 by objecting to them with the notation that they would be allowed if rewritten to include the limitations of their respective base claim.

Again, applicant appreciates and acknowledges Examiner's finding of patentability if claims 3, 8-9 and 14-15 are re-written; however, before amending the claims in such a fashion, applicant asserts the above reasoning is persuasive with respect to the patentability of the base claims, and reserves this amendment at this time. Applicant therefore requests withdrawal of Examiner's objections and rejections, and the allowance of claims 3, 5-9 and 11-15.

Claim 31: In order to render claim 31 *prima facie* obvious, the reference must teach or suggest each and every element of claim 31. In addition to the arguments above, incorporated herein by reference in their entirety, applicant notes that Kung fails to teach or suggest:

- (a) an encasing outer surface;
- (b) at least one externally-applied magnetic field;
- (c) at least one magnetically tipped stylus external to the outer surface; and
- (d) that the stylus is operable to apply at least one external magnetic field to at least one magnetic memory cell of the array.

In light of these arguments, applicant believes that claim 31 is patentable and respectfully requests withdrawal of Examiner's rejection, and allowance of claim 31.

Claims 32-34: Claims 32-34 depend from claim 31, and thus benefit from the above arguments, incorporated herein by reference in their entirety. Further, Examiner has noted points of patentable novelty in claim 34 by objecting to this claim with the notation that it would be allowed if rewritten to include the limitations of the respective base claim.

Again, applicant appreciates and acknowledges Examiner's finding of patentability if claims 34 is re-written; however, before amending the claim in such a fashion, applicant asserts the above reasoning is persuasive with respect to the patentability of the base claims, and reserves this amendment at this time. Applicant therefore requests withdrawal of Examiner's objections and rejections, and the allowance of claims 32-32.

ALLOWABLE SUBJECT MATTER

The Examiner has allowed claims 16-30. Applicant thanks the Examiner for this indication of allowance.

The Examiner has objected to claims 3, 8-9, 14-15 and 34 as being dependent upon a rejected base claim, but indicated that the claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant thanks Examiner for this suggestion to amend for allowability and respectfully reserves the right to amend these claims in accordance with Examiner's recommendation pending Examiner's consideration of applicant's persuasive argument illustrating how and why rejection of the base claims should be withdrawn.

NOTE REGARDING P.A.I.R. IMAGE FILE WRAPPER

In reviewing the image file wrapper for the instant application in the P.A.I.R. system, we noted that an amendment from U.S. Serial No. 10/302,513 (Atty. Docket No. 200207889-1) was mistakenly filed in the instant application. The Amendment has a listed mail room date of May 12, 2005, and the correct application serial no. 10/302,513 is listed in the document footer, following the page number. We respectfully request that the Amendment with mail room date of May 12, 2005 be entered in appropriate application serial no. 10/305,513. Confirmation of this request is respectfully solicited.

CONCLUSION

For the reasons given above, and after careful review of the cited reference, applicant respectfully submits that Kung does not result in, teach or suggest applicant's claimed invention with respect to the objected and rejected claims 1-15 and 31-34.

In view of the above Remarks applicant has addressed all issues raised in the Office Action dated 26 May 2005, and respectfully solicits a Notice of Allowance for claims 1-34. Should any issues remain, the Examiner is encouraged to telephone the undersigned attorney.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Applicant believes that no fees are due; however, should any fee be deemed necessary in connection with this Amendment and Response, the Commissioner is authorized to charge deposit account 08-2025, referencing the Attorney Docket Number 200300379-1.

Respectfully submitted,

By: 

Daniel W. Roberts, Reg. No. 52,172
LATHROP & GAGE L.C.
4845 Pearl East Circle, Suite 300
Boulder, CO 80301
Telephone: (720) 931-3016
Facsimile: (720) 931-3001